

In the Claims

Cancel claim 1 and amend claim 2 as follows:

1. (cancelled)
2. (currently amended) A method of fabricating an anode-supported flat- tubular solid oxide fuel cell stack, comprising:
extruding and drying a paste, containing NiO - yttria- stabilized-zirconia (YSZ) powder;
pre-sintering the resulting paste at 1250 to 1400°C to produce a supported tube;
coating a band-shaped organic layer ~~on~~ along a length of a center of an upper plate of the supported tube, coating an electrolyte slurry on an external surface of the supported tube through a wet dipping process, and drying the electrolyte slurry;
removing the band-shaped organic layer from the supported tube and repeatedly degreasing the electrolyte slurry at 200 to 450°C;
co-sintering the resulting supported tube at 1300 to 1500°C;
coating perovskite powder in which Ca, Sr, Mg, Co, or Al is added to LaCrO_3 on a portion of the supported tube, on which the organic layer is removed, through a plasma spray coating process to form a ceramic connector on the supported tube;
coating another organic layer on the ceramic connector, and
mixing 10 to 30 wt% LaSrMnO_3 powder, 10 to 30 wt% mixed powder of LaSrMnO_3 and 20 to 50 wt% YSZ, and 10 to 30 wt% LaSrCoFeO_3 powder with 50 to 75 wt% organic solvent and 5 to 40 wt% additive to produce three kinds of air electrode slurries;

sequentially coating slurry containing the LaSrMnO_3 powder, slurry containing the mixed powder of LaSrMnO_3 and 20 to 50 wt% YSZ, and slurry containing the LaSrCoFeO_3 powder on an electrolyte layer one time or more;

removing the organic layer from the ceramic connector;

sintering the air electrode slurries at 1150 to 1250°C to accomplish a unit fuel cell;

forming a plurality of grooves, gas-channels channels, and connector protrusions on metal plates made of a metal selected from the group consisting of ducrolloy, a Fe-Cr based alloy, a Fe-Cr alloy containing LaCrO_3 , Y_2O_3 , or La_2O_3 , a Cr alloy, and a Ni alloy;

polishing surfaces of the metal plates;

producing slurry for a connector plate containing LaSrMnO_3 or $\text{La}_{1-x}\text{Ca}_x\text{Cr}_{1-y}\text{O}_3$;

dipping the metal plates into the slurry for the connector plate and repeatedly drying the metal plates one time or more to coat the slurry for the connector plate on the metal plates;

sintering the resulting metal plates at 1100 to 1350°C under oxygen partial pressure of ~~10^{-20} to 10^{-3} atm~~ 10^{-10} to 10^{-3} atm to form ceramic coated layers on the metal plates to accomplish the connector plate; and

stacking the connector plate and fuel cells to fabricate the anode-supported flat-tubular solid oxide fuel cell stack and connecting stack electrodes to the anode-supported flat-tubular solid oxide fuel cell stack.

3. (original) The method as set forth in claim 2, wherein the paste for the supported tube comprises YSZ powder containing 30 to 60 vol.% Ni and 10 to 50 vol.% carbon powder acting as a pore forming agent, and 15 to 30 wt% distilled water,

5 to 20 wt% organic binding agent, 3 to 10 wt% plasticizer, and 1 to 7 wt% lubricant are added to a mixture of the carbon powder and YSZ powder based on a total amount of the mixture.

4. (original) The method as set forth in claim 2, wherein the electrolyte slurry comprises 60 to 95 wt% organic solvent and 5 to 40 wt% YSZ powder, and 5 to 12 parts by weight of binding agent, 5 to 15 cc plasticizer, 1 to 3 cc homogenizing agent, and 1 to 3 cc dispersing agent are added to a mixture of the organic solvent and YSZ powder based on 100 g of the YSZ powder.

5. (original) The method as set forth in claim 2, wherein the ceramic connector comprises perovskite powder in which Ca, Sr, Mg, Co, or Al is added to LaCrO_3 .

6. (original) The method as set forth in claim 2, wherein the three kinds of air electrode slurries comprise 10 to 30 wt% LaSrMnO_3 powder, 10 to 30 wt% mixed powder of LaSrMnO_3 and 20 to 50 wt% YSZ, and 10 to 30 wt% LaSrCoFeO_3 powder as starting materials, respectively, and additionally comprise 50 to 75 wt% organic solvent, and 5 to 40 wt% additive.

7. (original) The method as set forth in claim 2, wherein the slurry for the connector plate comprises 20 to 50 wt% LaSrMnO_3 or $\text{La}_{1-x}\text{Ca}_x\text{Cr}_{1-y}\text{O}_3$ powder, 0.5 to 10 wt% binding agent, 0.2 to 2 wt% solvent, and 0.2 to 5 wt% additive.

8. (original) The method as set forth in claim 2, wherein the slurry for the

connector plate containing LaSrMnO_3 is sintered at 1100 to 1300°C under oxygen partial pressure of 10^{-10} to 10^{-3} atm.

9. (original) The method as set forth in claim 2, wherein the slurry containing $\text{La}_{1-x}\text{Cr}_x\text{O}_3$ is sintered 1150 to 1350°C under oxygen partial pressure of 10^{-3} atm or lower.